

## ABSTRACT

Linear elements 101a to 101d are conductors, which have the element length equivalent to half a wavelength, have been placed so that they may draw a diamond shape. Delay elements 102a and 102b are bent conductors, which have a total length equivalent to one fourth wavelength and a length  $L_2$  equivalent to one eighth. The linear elements 101a and 101c are connected one another via the delay element 102a, while the linear elements 101b and 101d are connected one another via the delay element 102b. A feeding section 103 is connected to each of the ends of the linear elements 101a and 101b for feeding power to them. Between the tips of the linear elements 101c and 101d, a gap with a length  $L_3$  is left. A reflector 104 has been placed at a distance  $h$  from a diamond-shape antenna with delay elements along the  $-Z$  axis, the distance  $h$  being equivalent to 0.42 wavelength. This achieves the antenna device, which may be suitably mounted on any of small wireless apparatuses and form a primary beam, of which horizontally-polarized wave or vertically-polarized wave tilts toward the horizontal direction.